THE FARM INDEX

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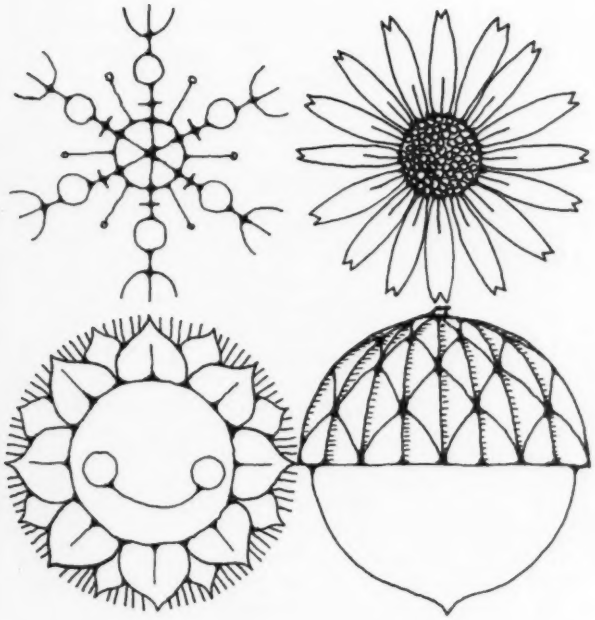
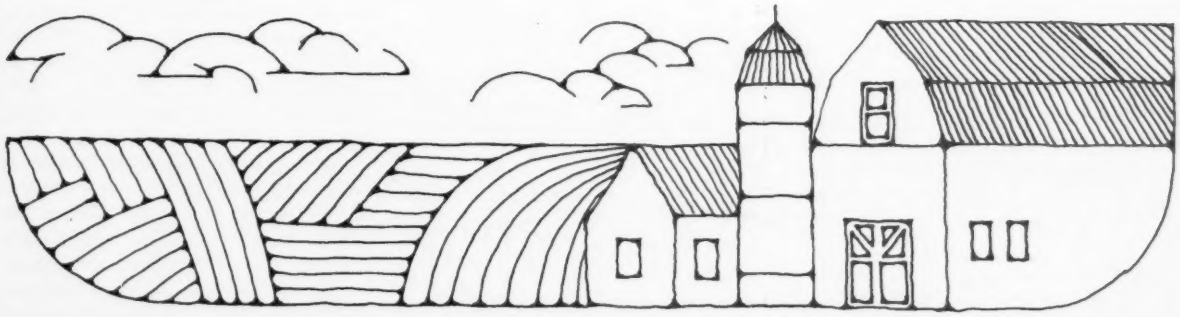


Farming in the Third Century



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Outlook

Money-wise, farmers are off to a good start in 1976, with earnings at a favorable level and net worth generally strong and improving. Livestock producers, in particular, look ahead to a better year after some rough sledding in 1974 and 1975.

Farm asset values, especially land values, rose steeply in 1975, and further modest gains are expected in 1976.

Debts should rise more rapidly this year . . . big gains are likely in loans for expanded cattle production and for purchase of higher-priced farmland. Lenders should be able to handle the larger credit needs and will qualify most loan applicants. Farmers in most areas should still be able to choose from at least two lender sources.

Interest rates should stay close to current levels. But with land values and farm costs high and rising, and with farm receipts more variable and uncertain, lenders are becoming more selective in making and servicing farm loans. An important factor in the current farm economic picture is the rising farm land values. An early estimate is for a 14-percent spurt from March 1, 1975 to March 1, 1976. The largest increases are occuring in major crop producing regions. The increases may reflect expectations about rates of inflation, as well as optimism about food demand in coming years. Farmland values have risen faster than the general price level since 1972.

On the negative side, lenders in general view farm lending risks as being greater now than in recent years. They are concerned about skittish prices of many products in the still-nervous demand setting and the low world stocks level. Also, the debt-equity ratios have edged up slightly, indicating that the farm sector is finding it harder to cope with price fluctuations. Farmers this winter have been metering their crop marketing more than in the past, to cope with the situation. And in the future they'll probably rely more heavily on risk reducing strategies, including hedging, forward contracting, vertical integration, or greater diversity in production.

Women in Agriculture

Women are agriculture's unsung heroes. Historians have largely ignored their contributions—probably because plowing a field, slopping hogs, churning butter, making soap, emptying chamber pots, and washing work clothes don't seem like great achievements. Nevertheless, their willingness to do tiresome but necessary chores has kept many a farm business from going under.

Farmwomen worked especially hard in pioneer days. One account of life in Dutch New Netherlands (now New York) circa 1625 tells of the men spending their time hunting, while the women were left to tend the farm and do the housework, not to mention caring for the children.

More than 2 centuries later, most farmwomen were still doing more work than their husbands. An 1862 report from the newly formed USDA said that on 3 out of 4 farms "the wife works harder, endures more, than any other on the place." Unfortunately, the report offered no solutions to the farmwoman's lot. The author simply said that husbands could and should remedy this situation, and that a

mother "should train her daughters for marriage and her sons in giving their wives proper treatment."

Although most early women settlers labored on small farms with their spouses, some Southern women managed huge plantations, especially during the Civil War when many fathers and husbands went off to battle.

Without their men, farmwomen in both the North and the South returned to the fields—running mowers, reapers, rakes, drills, and plows—cared for livestock, milked cows, and made butter and cheese. These women literally fed both armies.

Women's role in the Grange. After the Civil War, a number of farmers' organizations were formed in which women played an active role. The National Grange, born in 1867, realized the importance of the family unit. Women held several offices during the Grange's early years. Members such as Mary Anne Bryant Mayo of Michigan went about lecturing and urging other women to get involved in social and educational activities.

In 1892 the Grange voted to give Caroline Hall equal status with the seven male founders of the organization. Miss Hall had held various positions in the Grange, including first Ceres and lady assistant steward.

"Patrick Henry in Petticoats." Another leader of American agriculture was Mary Elizabeth Lease, who became associated with the Farmers' Alliance movement. Admitted to the bar in 1885, she developed a gift of oratory that she used in support of Union Labor candidates during the 1888 campaign. Two years later she made some 160 speeches for the Union Labor Party, including the famous: "What you farmers need to do is to raise less corn and more hell." Called the "Patrick Henry in Petticoats," Mrs. Lease was well received in the Midwestern States, sometimes making as many as eight speeches a day.

Joining the lecture circuit. A number of women became adept public speakers through their affiliation with the National Grange and other farmers' institutes organized by agricultural societies, State boards of agriculture, State colleges of agriculture, and experiment stations. Women lectured to both men and women on such subjects as food preparation and diet as well as general agricultural topics.

The Farmettes of World War I helped the war effort by working on farms.

The farmwoman's workday never ended til she had done the evening milking.

Women participated in the formulative meetings of the American Association of Farmers' Institute Workers, begun in 1895. However, once the organization was on its feet, the men voted—against strong opposition from the women—that the women must have separate meetings. A committee was set up to work on women's institutes. But due to stiff competition from the Homemakers Association, canning clubs, and extension home demonstration agents, the institutes were disbanded during World War I.

Government becomes concerned. Various organizations at the turn of the century were concerned with upgrading rural life, food production, and nutrition, but not until 1908 did the Federal Government get into the act...to the betterment of women. President Theodore Roosevelt ap-

Music was a refuge for many women after a hard day's work on the farm.

Women worked in groups to make chores like mattress-making fun.

A home demonstration agent gives these women some pointers on canning.

pointed the Country Life Commission. The report of the Commission in 1909 discussed women's work on the farm and concluded that "relief to farmwomen must come through a general elevation of country life." Such improvement would give women time to participate in vital affairs of the community.

Few modern conveniences. The role of women in agriculture continued to be a topic of discussion and study. A survey taken about 1912 showed that few farmwomen enjoyed modern conveniences in their homes. Only 57 percent had oil stoves; 15 percent had furnaces; 33 percent, hand-operated washing machines; 10 percent, washing machines run by engines; and only 11 percent had drinking water in the house. The survey also found that women were working in the fields, doing some of the most back-breaking chores.

Another survey, reported by Secretary David Houston of USDA in 1913, showed that women wanted labor-saving appliances, assistance in home management, and a women's bureau. They complained of isolation and loneliness. Some of their grievances were answered by the Smith-Lever Act of 1914, which for the first time made extension work an official institution.

Farmwomen to the rescue. The entrance of the U.S. into World War I drained manpower from the farm, and once again, women filled the void. They picked cotton, harvested crops, and picked and packed fruit. The Food Production Act of 1917 employed 600 women as emergency extension agents. The next year the number had risen to 1,724 home demonstration workers and 762 boys' and girls' club workers.

Young women from towns and cities joined the Farmettes—a joint venture of USDA and the U.S. Food Administration—who canned and dried food and worked in commercial processing plants.

During the war years, many young women came to Washington, D.C., to work in USDA or the U.S. Food Administration. Generally, they were in low-grade clerical positions. One exception was Mary Pennington, who came to USDA to head the Food Research Lab in 1908.

USDA representative. Later that year, despite protests within the Department over the selection of a woman, she was designated USDA's representative to the first International Congress of Refrigerating Industries in Paris. In 1919, she left the Department to enter private industry, at twice her Government salary.

Dr. Pennington's work in sanitation and refrigeration led to revolutionary changes in the egg and poultry industries. A member of 12 professional organizations and 3 honorary societies, she was the first woman accepted in the American Society of Refrigerating Engineers. In 1940, she received the Francis Garvan gold medal, awarded to American women for distinguished service in chemistry.

A USDA first. Secretary Henry C. Wallace was instrumental in recruiting the first and only woman to head a major USDA research agency. In 1922 he announced his intention to expand the Department to include a new bureau of home economics to be

led by a woman. Louise Stanley, head of the Home Economics Division of the University of Missouri, was selected. At USDA, she directed important studies in nutrition, clothing, and housing.

Probably the most significant of these efforts was a landmark nutrition study conducted in the late 1920's and early 1930's to determine scientifically what makes up a well-balanced diet for humans at different levels of expenditure.

Supporting the war effort. Women reached another peak in their contributions to farm production during World War II, when they drove tractors or horse-drawn equipment; operated combines, reapers, mowing machines, and hay loaders; cared for cattle, and did the rest of the farm chores. Daughters who were away at college came home to work during vacations. The less fortunate were forced to drop out of school to stay home and help.

More than a million strong. During 1943-45 more than a million women were recruited for seasonal work, and over 32,000 for the year round, primarily on dairy and poultry farms. Women also worked in food processing plants—canning, freezing, and drying foods.

The major changes in American agriculture during World War II and the postwar years greatly affected the life of farmwomen. Most homes now have running water, central heating, electricity, telephone, radio, television, freezers, and other labor-saving appliances. Because of the trend toward large-scale, specialized farming, fewer farms keep a large garden, a cow for butter and milk, and a few chickens for eggs. Thus, these chores have been largely eliminated from the farmwoman's daily routine.

Nonetheless, farmwomen still do their share. Besides housework, they can and freeze foods, sometimes run tractors during planting and harvest time, and often do the paperwork that keeps the farm running.

[Based on a speech, "Women in American Agriculture," by Vivian Wiser, National Economic Analysis Division, at the National Agricultural Outlook Conference, November 1975.]

A Day in the Life of a Farm Wife

January 14, 1901... It was so cold when I awoke this morning that ice had formed on the inside of the windows. Pulled the quilts up over my head and tried to pretend it was summer, but it didn't work. After counting to 100 I leaped from the bed and quickly dressed. Heard the baby stirring in the next room.

Downstairs in the kitchen I built a fire in the wood stove and fixed pancakes and sausage. The old stove was smoking worse than usual. It just doesn't draw any more. Made a mental note to talk to Frank this evening about getting a new one. A necessity!

After breakfast I milked the cows, strained the milk, and put it in pans. Skimmed the cream from last night's milking--crock's nearly full. Must churn tomorrow.

The morning's chores passed quickly. Washed the dishes. Made the beds, plumping up the feathers. Emptied the chamber pots. Did the laundry and hung it out to dry. The new puppy succeeded in dragging Frank's good trousers from the line. When I finally reached them, complete with a tear in the right leg, I had to do them all over again.

Before I knew it, it was time to start dinner. Freshened some pork, peeled potatoes, and fixed cabbage. Warmed up last night's apple pie and made a big pot of coffee. Rang the bell for the men to come and eat.

After dinner I washed the dishes. Seems like I spend half my life in the kitchen. Had to prime the cistern pump before I could get water. Filled the lamps and washed the chimneys. Got the clothes from the line--everything was stiff from the cold.

Had the children fill the wood box when they got home from school. Hardly had a chance to pay attention to the baby all day.

After feeding the chickens and gathering eggs, it was time to start supper--cold ham, warmed up potatoes from dinner, applesauce, and cookies. Supper was a little late; the men were out cutting wood.

Washed dishes for the last time today and prepared dough for baking tomorrow. Helped the children with their studies before they went to bed. I must talk to Frank about that new stove, but maybe I'll let that wait 'til tomorrow.

CRUDE FOR FOOD

"Crude for food" might well become the byword of many oil-exporting nations, as they trade their petroleum reserves for bigger and better diets. And the U.S., a top customer for imported oil—valued at about $25 billion annually—is supplying a weighty share of that food.

One of the big takers of U.S. food is the 13-member Organization of Petroleum Exporting Countries (OPEC), made up of Algeria, Ecuador, Gabon, Iran, Indonesia, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, United Arab Emirates, Nigeria, and Venezuela. These oil giants—exporters of about $135 billion worth in 1975—imported almost $5 billion in agricultural goods in 1974, about a third from the U.S. The figure for last year probably exceeded $6 billion, with the U.S. share slightly larger than in 1974. Our imports of OPEC oil totaled $17 billion in 1974.

Iran major importer. Iran, the No. 2 OPEC exporter of oil, is by far the group's major buyer of U.S. farm products. In fiscal 1975, the country took a record $757.2 million of U.S. agricultural products, 4 times more than a year earlier. Big increases came from wheat, rice, and vegetable oils. On the other hand, we bought almost $776 million of oil from them during the first half of 1975.

Growth in U.S. farm exports to Iran may slow somewhat during the first part of this year, however, due to congestion in Iranian ports and a larger wheat crop there. By late in the year, though, Iranian policies should speed up agricultural imports.

The No. 1 oil producer in the OPEC bloc, Saudi Arabia, is another burgeoning market for U.S. food. Its imports of U.S. agricultural products in 1975 are estimated at $180 million, almost 3 times the 1973 level. In contrast, we bought almost $1.3 billion of their oil during the first 6 months of 1975.

Saudis call for more. With the rising affluence of the Saudis comes a louder call for American and European types of bread and bakery products. Imports of U.S. wheat flour in the past year more than quadrupled. Other big ticket crop imports from us were rice and vegetable oils.

The Saudis have also taken a liking to U.S. processed foods. Items in big demand are baked goods, tomato and fruit juices, soft drinks, canned peaches, honey, almonds, and frozen vegetables. Up-and-comers are peanut butter and popcorn. Demand for frozen poultry is also zooming.

Since two-thirds of Saudi Arabia's food supply is imported, gains in petrodollars should continue to generate increased food imports through the late 1970's, with the U.S. a major figure.

Iraq surprise buyer. Iraq has been a surprise buyer on the scene. Due to political differences, the country restrained trade with the U.S. prior to 1973. However, when Asian suppliers couldn't fulfill rice shipments and U.S. wheat was cheaper than from other sources, Iraq turned to us. As a result, imports of U.S. agricultural products shot from $1.6 million in 1972 to almost $115 million in 1974.

For the past 2 years, American snack foods—popcorn, almonds, potato chips, and bakery products—have been making a hit in Kuwait. Also, American-operated fried chicken outlets in the country have upped imports of U.S. frozen poultry.

In 1974, U.S. exports of farm products to Kuwait totaled over $21 million, almost 2½ times the 1973 figure. Exports for 1975 were probably even greater.

UAE favors processed foods. U.S. agricultural exports to the United Arab Emirates (UAE) in fiscal 1975 reached over $8 million, 5½ times the fiscal 1973 level. Big items were processed foods, such as canned peaches, pears, apricots, fruit cocktail, chicken parts, whole dry milk, almonds, and cake mixes. Further hikes in processed food exports are likely.

U.S. flour and vegetable preparations have been selling big with UAE food processors and bakeries. Also, vegetable seeds from the U.S. have been enjoying a fertile market.

Pop a hit in Qatar. Total agricultural imports by Qatar are estimated at $130 million for 1975, but the U.S. share is only about 1 percent. U.S. items gaining in the export share were corn oil, baked goods, canned meat, fruit cocktail, frozen vegetables, and soft drinks. In fact,

soft drink bottlers in Qatar bought ingredients worth $192,000 from U.S. firms.

U.S. agricultural exports to Algeria for 1975 are estimated at about triple the $71 million in 1973. Big items were U.S. wheat, pulses, tobacco, and dairy products. Algeria's next-door neighbor, Libya, took $22.4 million worth of U.S. farm goods in fiscal 1975, with tobacco a major commodity.

Nigeria is an expanding market for U.S. farm goods, buying $78.6 million in fiscal 1975. U.S. purchases of Nigerian oil, on the other hand, totaled over $1.7 billion for the first half of 1975.

Wheat, pulses, cotton, frozen poultry, tallow, tobacco, and processed foods are likely to enjoy excellent growth rates during the next few years. Sales of U.S. wheat to Nigeria in fiscal 1976 are likely to be double the year-earlier level of 265,000 tons.

Gabon takes less. The African nation of Gabon took about two-thirds fewer U.S. agricultural goods in fiscal 1975 than a year earlier. Exports dropped to only $201,000, most of which were rice, wheat, wheat flour, and soybean oil.

The Latin American OPEC members—Ecuador and Venezuela—have also been eager customers of U.S. farm products. U.S. farm exports to Ecuador totaled $53.6 million in fiscal 1975, nearly half of which was wheat. Growth in these exports, however, is limited because of Ecuador's plans to develop new agricultural areas.

Venezuelan trade booming. U.S. agricultural exports to Venezuela doubled during 1973-74, hitting $323 million in 1974, mostly because of higher wheat prices. The country also took substantial amounts of U.S. corn, soybeans, vegetable oils, and tallow. However, in the future, U.S. farm exports may encounter stiffer competition from Brazilian soybeans and vegetable oils.

Indonesia has been unique among the OPEC members in that it has apparently made no real effort to upgrade the national diet through petroleum revenues, investing heavily in agricultural development instead. Also, the government has shifted heavily from the U.S. to Asian suppliers, particularly for rice and cotton. As a result, our agricultural exports to the country in fiscal 1975 totaled only $71.8 million, slashed by more than half from a year earlier. Gains in sales of wheat and cotton, however, should cause U.S. agricultural exports to Indonesia to reach $150 million in fiscal 1976.

Four other Arabian customers. In addition to the OPEC countries, there are four booming agricultural importers found on the Arabian Peninsula which are customers for our products. These are Bahrain, Oman, People's Democratic Republic of Yemen, and the Yemen Arab Republic, which together exported $2.5 billion worth of oil in 1975.

The biggest taker of U.S. farm goods among the four is the People's Democratic Republic of Yemen. U.S. exports for 1975 are estimated 15 percent above the year-earlier high of $8.6 million, due to larger sales of wheat and snack foods. The Yemen Arab Republic came in second, importing $4.6 million worth of U.S. farm goods in fiscal 1975.

Oman stocking supermarkets. U.S. agricultural exports to Oman were $715,000 in fiscal 1975, over 16 times the value 2 years earlier. Items in strong demand were vegetable oils, dairy products, and canned fruits and vegetables. Fast up-and-comers are frozen poultry and processed foods to meet the demand at new grocery stores and international hotels in Oman.

Despite boosted sales of U.S. wheat and frozen poultry to Bahrain in 1974/75, our farm exports to this country fell by 8 percent to just short of $3 million. The reason was intense competition from Europe and Australia in the processed food market.

In addition to the oil giants of OPEC and the other four Arabian countries, the U.S. trades agricultural goods with other oil-exporting nations. Notable among these are the U.S.S.R., Canada, and Mexico.

U.S.S.R. minor oil exporter. The U.S.S.R. is the world's No. 1 oil-producing nation—at 9.6 million barrels a day—but it exports only a fraction of its oil, keeping the majority for domestic use. Any future tapping of new oil reserves would probably not result in a substantial increase in exports. In contrast, Saudi Arabia exports over 90 percent of its daily petroleum output of about 8 million barrels.

Our agricultural exports to the Soviets have been unstable since the big grain buys of 1971/72. After 1972/73, when we sent a record $954 million of agricultural products to them, our exports declined to $410 million in fiscal 1975. However, 1975/76 started off with booming grain sales, with further progress beyond this season to depend on the outcome of the recent long-term grain agreement. In addition to grain (mainly wheat and corn, and some rye) we sent sizable quantities of almonds, cattle hides, inedible tallow, and citrus fruit.

Mexico big U.S. customer. Mexico ranks as our sixth best customer for U.S. farm goods, taking $850 million worth in 1974/75, up $240 million from a year earlier.

A minor oil exporter now, Mexico will probably become a major one in 5 to 10 years. The U.S. stands a good chance to share in this market.

Canada cutting off flow. Canada, on the other hand, presents a bleaker picture, as far as oil exports to the U.S. go. The Canadians plan to scale down oil exported to our country until the flow is entirely cut off by 1981. The oil now coming to the U.S.—$1.3 billion worth in the first 6 months of 1975 alone—will be diverted to domestic use.

Canada still remains the fourth largest taker of U.S. farm products. In fact, the trade value has followed a steady uptrend, hitting $1.3 billion in fiscal 1975.

[Based on "U.S. Agricultural Exports to the Arabian Peninsula Soar," *Foreign Agricultural Trade of the United States*, October 1975, and other special material from John B. Parker, Foreign Demand and Competition Division.]

Contrary to popular image, the majority of Americans of Spanish origin are not engaged in farm wagework. Like other Americans, white and black, most live and work in urban areas.

But while Spanish Americans as a group are not tied to agriculture for a living, their share of the southwestern farm labor force is higher than in other regions. And in recent years, expanded media coverage of hired farmworkers and mounting national interest in the roles Spanish-origin people play in the problems of farm labor and poverty have made this ethnic group an increasing source of concern.

For the most part, hired farmworkers of any ethnic group are in low-income, low-skilled positions ranked near the bottom of the socioeconomic ladder. However, an ERS profile of Spanish-origin farmworkers emphasizes that these workers have particular problems and needs related to their cultural and demographic background that tend to make their economic plight more severe and have stymied their occupational mobility and advancement.

Dependent on farmwork. Focusing on age and sex distribution, education, migratory status, and earnings sources of the nation's hired farmworkers in 1973, the ERS study highlights two central themes: (1) Spanish-origin farmworkers are more highly dependent on agriculture as a major means of support than other white American (Anglo) and black farmworkers, and (2) they appear to have fewer viable job options.

As an indication of Spanish farmworkers' dependence on agriculture for a living, researchers found that they generally worked in agriculture for longer periods during the year than other groups of farmworkers, averaging 143 days of farmwork compared with 105 days for blacks and 85 days for Anglos. More than one-fourth were full-time agricultural workers employed for 250 days or more.

Principal activity. The Spanish-origin group also most often cited farm wagework as their principal activity during the year, and for the

vast majority, farmwork was the only type of employment held. Only about one-fifth engaged in nonfarm work as well, and then it was usually for shorter periods than other ethnic groups. In contrast, almost one-half of the Anglos and more than one-third of the blacks did some nonfarm work in 1973.

In addition, Spanish-origin farmworkers as a group were older than their Anglo counterparts, and were more frequently household heads and wives who had the primary responsibility for their families' support.

Most of the Spanish-origin workers were between 25 and 54—the prime working years—while the largest share of Anglos were young people aged 14-24. And as age levels increased, researchers found the proportions of Anglo farmworkers decreased, suggesting that as they became older, Anglos tended to find higher-paying nonfarm jobs and only occasionally supplemented their earnings with agricultural employment.

Few fringe benefits. How does this extreme dependence on agriculture affect Spanish-origin farmworkers in terms of bettering their incomes and living conditions? In many cases, the very nature of their occupation bars them from several sources of income improvement or stability available to nonfarm workers.

Farmworkers are generally excluded from many social benefits and protections guaranteed to other groups of workers, such as workmen's compensation rights. Unemployment insurance was recently extended to farmworkers, but only on a temporary basis. And minimum wage, social security, and child labor provisions are limited to workers on larger farms. Moreover, many agricultural jobs offer few advancement opportunities.

While Spanish-origin workers appear unable to improve their economic situation within agriculture, they also seem to have few viable job alternatives to farmwork.

Educational barriers. Occupational mobility and advancement are blocked for many of them by their extremely low educational levels. Although younger workers showed a substantial educational gain over their elders, more than half of all Spanish-origin farmworkers had 4 years or less schooling, and only 2 percent had finished high school compared with over one-third of the Anglos and 13 percent of the blacks.

While low education levels often restrict access to higher-paying, higher-skilled jobs, inadequate schooling can also act as a barrier to participation in manpower programs that are designed to improve education and work skills. Entrance standards and tests for these programs may disqualify workers most in need of training because of the very educational deficiencies that bar them from better jobs. At the same time, skills and expertise gained in farmwork are often not transferable to other types of nonfarm employment, further limiting occupational mobility.

Squeeze on income. The study noted that an additional barrier to self-employment in farms or small businesses could be the inability of most Spanish-origin farmworkers to accumulate savings or business capital. While their wage rates were generally higher than those of other farmworkers, their large household size and high dependency rates put a squeeze on family income and yielded only a small return per person.

Spanish farmworker households averaged more than five people, compared with less than four for blacks and Anglos. When household size and median incomes are considered together, blacks and Spanish-origin households received only 44 cents per capita for every dollar of per capita Anglo income.

High migrancy rates. These financial problems are compounded by the relatively high share of Spanish-origin farmworkers that are migratory. One in every five of these workers performed some migratory labor in 1973, in contrast to one in fifteen Anglos and one in forty blacks. For these workers, increased travel costs, job insecurity, limited access to welfare and educational services, and often poor living conditions only aggravated their economic plight.

Entering the migratory stream is rarely a matter of choice—it's usually a matter of necessity. Migratory movements often stem from farm areas along the U.S.-Mexican border—areas that attract large numbers of Mexican commuters and an unknown number of illegal aliens seeking employment. Apparently many Spanish Americans living in border areas are forced into migratory farmwork because they can't economically compete for local jobs at the low wage rates Mexican commuters and illegal aliens are willing to accept.

Specialized training needs. The study concluded that improvement in the general economic well-being of Spanish-origin farmworkers will depend largely on their increased access to various types of higher-paying nonfarm employment. A partial solution to the workers' dilemma, researchers noted, could lie in the development of specific manpower programs tailored to provide this ethnic group with the education and skills needed for nonfarm jobs.

Farm labor has already been targeted for various income and training programs administered by the Department of Labor, Department of Health, Education, and Welfare, and USDA. But if these programs are to benefit Spanish-origin farmworkers, researchers emphasized, planners must take into account the particular attributes of this work force that may complicate their manpower training needs.

Cultural considerations. Besides their large household size and dependency rates, high degree of migrancy, and educational disabilities, program planners should also take note of various cultural traits that could affect the success of training efforts. These traits, which the study suggested for further investigation, include ethnic solidarity and cultural pride, strong family ties, professional rather than business aspirations, a nonmaterialistic outlook on life, and the influence of machismo, or emphasis on masculinity and male dominance.

[Based on the manuscript, Socioeconomic Characteristics of the Spanish-Origin Hired Farm Working Force, 1973, by Leslie W. Smith, Economic Development Division.]

Protein Search Taps Spectrum of Organic Matter

The search for new protein sources goes on and on. Not only in the U.S., but also in many other countries. The soybean has become and will likely remain the No. 1 source of vegetable protein, particularly in the U.S. But the soybean is not perfect, so research is underway to develop even higher yielding varieties, including a hybrid and new varieties adaptable to growing conditions in countries where production is currently nonexistent. Attention is also being focused on increasing protein supplied from a wide variety of other oilseeds, including cottonseed, ground nuts, rapeseed, sunflowers, and lupin.

Efforts to develop feed and cereal grains with higher protein contents have been paying off. Scientists have come up with new high-protein varieties of wheat, corn, sorghum, and barley. They offer the potential of replacing large quantities of conventional protein meals in animal feeding as well as increasing protein levels in human diets consisting mainly of grains.

Considerable progress is being made in increasing protein yields in root crops and extracting protein from nonedible plants such as grasses. Researchers have demonstrated that the protein content of commercial varieties of potatoes can be multiplied several times. Extracting edible protein from alfalfa has also been perfected, but economic factors may limit commercialization of the process.

Unstable supplies of conventional protein and environmental considerations have led to several new industrial processes for microbial or single cell protein (SCP). Yeasts and bacteria high in protein are being produced on petroleum oil and gas, alcohols, and pulp and paper effluents in plants located in Europe, Asia, and the U.S. World production capacity is around a half million tons a year and could exceed a million tons by 1980.

SCP protein is used primarily as a replacement for expensive dried milk products and fishmeal in animal feeds. Small quantities of torula yeast are being used as a human food. But uncertainties about SCP safety and consumer acceptance tend to restrict any immediate penetration in the food market.

Although technologically feasible and a promising protein source, SCP appears to carry a high price tag. Production costs are difficult to estimate, but range between $400 and $600 a ton for some products. And in the face of towering petroleum prices and other inflationary factors, SCP's chances of penetrating the animal feed ingredient market look bleak. But, industrial waste, environmental policies, and adequate subsidies for SCP production would alter the situation.

The search for new protein sources hasn't stopped with a few plants, yeasts, and bacteria. No organic substance seems beyond possibility. In fact, the lowly algae and fungi, and even those environmental troublemakers—animal and industrial wastes—are the subjects of some SCP projects.

[Based on special material from Clark R. Burbee, National Economic Analysis Division.]

Shortages, Prices Nibble at Diets

Tight supplies and higher food prices, coupled with a general economic downturn, caused us to tighten our belts last year—we ate less. On the average, we consumed 98.8 percent of 1974's intake.

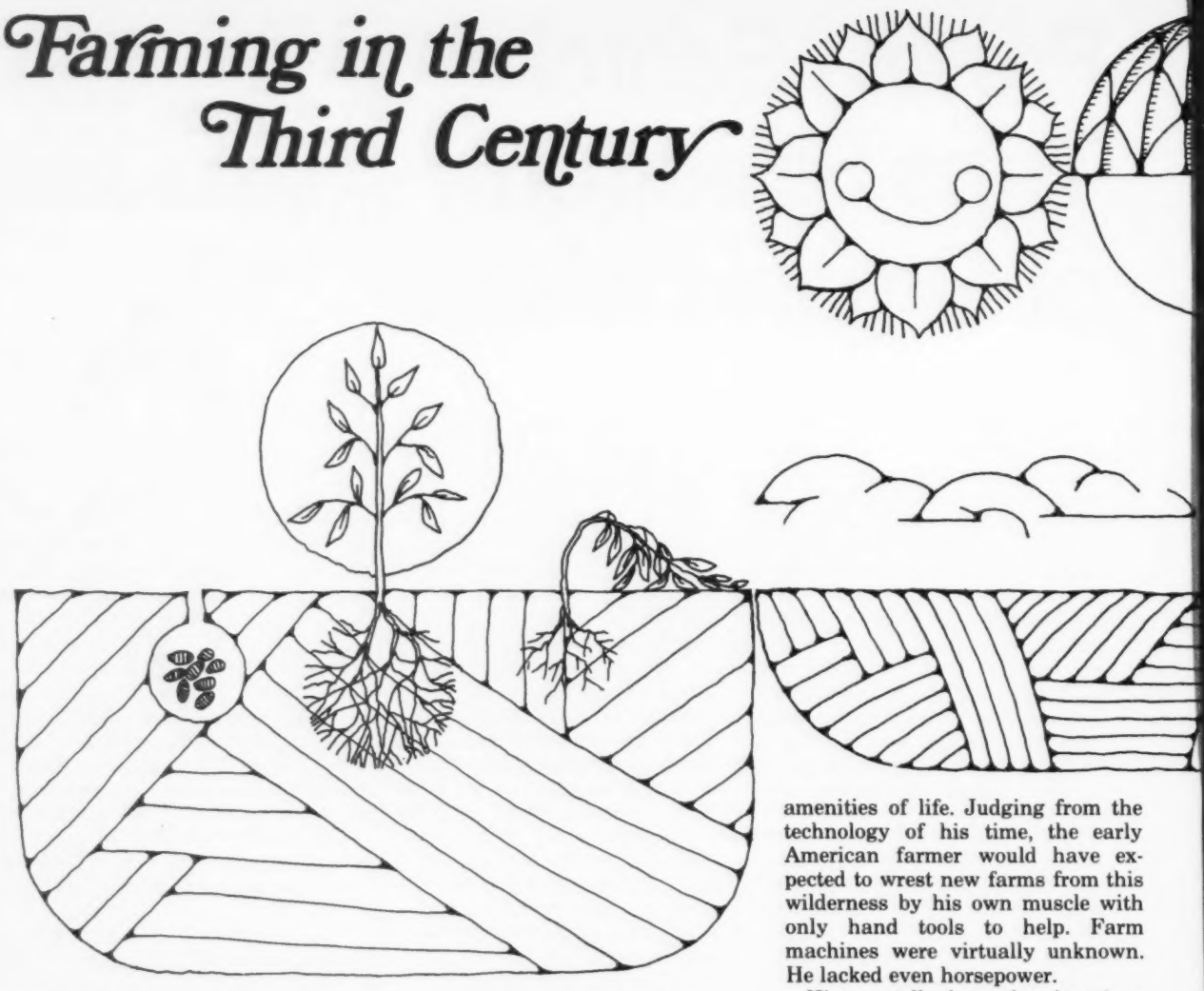
Nutritionally, we lost something more than calories in that 1.2 percent: We lost a bit of nutrient fat, carbohydrates, thiamin, vitamin B12, and phosphorus. We managed this by eating less pork, poultry, eggs, lard, salad and cooking oils, and refined sugar.

But the declines in nutrients are so small that they hardly make a dent in our diets. And not all nutrients declined: we downed 3 percent more ascorbic acid (vitamin C) in 1975 than a year earlier. Greater intake of frozen orange juice was mainly responsible.

Annual protein intake remained the same, at 99 grams—well above the average nutritional needs of the population. Animal products supplied over two-thirds of this protein, with milk and beef chipping in the biggest share.

[Based on "Nutritional Review," by Berta Friend and Ruth Marston, Agricultural Research Service, in *The National Food Situation*, November 1975.]

Farming in the Third Century



Of one thing we can be sure--whatever may be the technical developments in agriculture, its poetry will continue. The wonders of life, growth, and death, the cycle of the seasons, the marvels of continuous creation so clearly manifested in agriculture--these will still be with us.

This chapter attempts the impossible. After looking back over our 200-year history, we now try to look ahead to what the next century or two might bring.

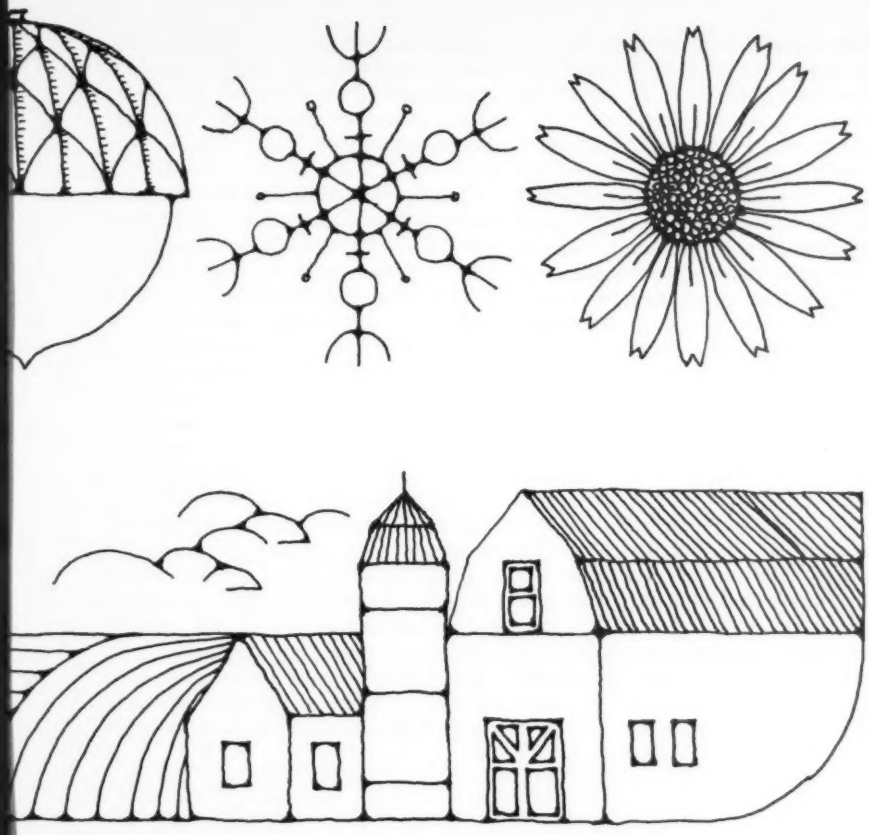
The 10 preceding articles in this series demonstrate the difficulty. What farmer in 1776, drawing upon a century and a half of colonial experience, could have in his wildest fancies imagined the world of the 20th century farmer?

For one thing, he would have been too preoccupied with the circumstances of his day to see the underlying trends that would produce the agriculture of the 1900's. He was in the midst of a war for independence that would last 6 long years.

Taming wilderness. Then, too, there was a wilderness spanning a continent to be brought under cultivation. It was without roads, schools, hospitals, or even the most basic amenities of life. Judging from the technology of his time, the early American farmer would have expected to wrest new farms from this wilderness by his own muscle with only hand tools to help. Farm machines were virtually unknown. He lacked even horsepower.

History tells how the American farmer survived and prospered, using methods he did not foresee to overcome obstacles he could not anticipate. He transformed a wilderness into an agricultural plant of unparalleled efficiency. But, paradoxically, his problems today seem no less formidable than those of 1776.

New problems. They are different problems, of course: pollution of the environment, threatened shortages of energy and raw materials, a burgeoning world population pressing on food supplies, the frenetic pace of technological change. In addition, we are warned of new ice ages to come, or of encroaching deserts. And always there is the underlying fear of nuclear holocaust.



Undoubtedly, our view of the future also is powerfully influenced by present circumstances, some of them undoubtedly transitory. Although we have vastly greater information resources to draw on, the future will yield its secrets no more willingly than in the past.

Fear of failure. But fear of failure should not deter us. Forecasting is a necessary part of the business of living. Our plans and the things we do to realize them assume that the consequences of our efforts are predictable, even while acknowledging that our foresight is less reliable than our hindsight. The bad guess is a part of the game.

Let us begin on the side of the optimists. Scientists tell us that the world probably is some 4 billion years old, that human beings have been on the earth for perhaps 5 million years, and that agriculture began about 10,000 years ago. So, it seems reasonable to project that during the next 200 years, hardly an eyeblink in the larger context of time, the world will neither freeze nor fry nor choke nor starve nor blow itself up.

Reasonable humans. Let us make the further assumption that the human race is essentially reasonable and is likely to stop an adverse trend somewhere short of ultimate disaster.

What do knowledgeable people think agriculture will be like 200 years from now? Several opinions were sought.

In most cases the thoughts expressed are in technological terms. What kind of farm machinery? Will we be taking our food in the form of concentrated pills? Will we all be computerized? Will we have achieved artificial photosynthesis?

A new age. This orientation reveals the technological bent of our age. But 200 years is long enough for a new age to emerge. Will technology continue to be our major preoccupation? Will it be in some degree replaced by concern for the aesthetic and the spiritual? For many years now, we have moved away from the individual and toward group action. Will this continue, or has this trend run its course? Will the present institutional arrangement continue for the farm and the nonfarm sectors, or will there be change?

Bane or benefactor? Science and technology will no doubt remain dominant in agriculture for many years to come. But even now the previous unquestioned acceptance of science and technology as the benefactor of the human race is being challenged. Science and technology will increasingly be asked to show broad-scale benefits to the human race. The wonders and marvels of new knowledge and of new methods, formerly a sufficient justification, will not suffice. We may conclude, with the Book of Ecclesiastes, that the pursuit of material ends is vanity and a striving after wind. We are likely to make better use of our technological competence in the years ahead, and strike a better balance between things material and things of the heart, the mind, and the spirit.

But science and technology will still be important. What changes might we see?

Wrong side up. The plow, which was the symbol of agriculture during the first 200 years of our country's existence, will gradually be retired. We will rediscover the wisdom of the Indian, who commented the first time he saw a plowed field: "Wrong side up."

The wind and water erosion caused by the plow is incalculable. We will learn to grow crops using minimum tillage. We will learn to control weeds with chemicals that are biodegradable. We will use various kinds of mulches. We probably will have large machines moving over the land, performing agricultural tasks. But these machines will not be pulling huge gangs of plows. What is left of our soil we will try to keep in place rather than sending it flying through the air and drifting down the river.

Possible breakthroughs. What technological breakthroughs might occur in agriculture during the next 2 centuries? Here we can do no more than surmise that some of the presently hoped-for advances will in fact occur. Secretary of Agriculture Butz says that trying for a scientific breakthrough is like drilling for oil—

you never know whether you are 5 feet from a million dollars or a million feet from $5. Here are some great things that might happen:

Upgrading the protein content of the cereal grains and other crops.

Hybridizing of additional crops, including wide crosses like triticale.

The learning of soil management to permit the use for agriculture of the fragile soils of the tropical rain forest.

Biological rather than chemical control of harmful insects and diseases.

Killing flies. Control of the tsetse fly, the vector of sleeping sickness in Africa, thereby opening up vast areas for agricultural use.

Successful long-range weather prediction and modification.

The use of satellites for worldwide crop reporting.

Extension of the principle of nitrogen fixation to new groups of plants, in addition to legumes, thus cutting down the need for commercial fertilizer.

The desalination of sea water, permitting human habitation and agricultural production in lands now unused.

Conquest of the fuel problem, probably by the use of nuclear energy.

Greater environmental control for both plants and animals, providing more economical production and higher, more standardized quality.

Plant protein. Advances in food technology, particularly the modification of plant protein so as to provide meat-like foods to the many millions who cannot afford those from animals.

The use of microbial action on various feedstocks (such as organic wastes or fossil fuels) for the direct production for feed and food.

Systems of distribution that will minimize the twin problems of overeating and poverty-related malnutrition.

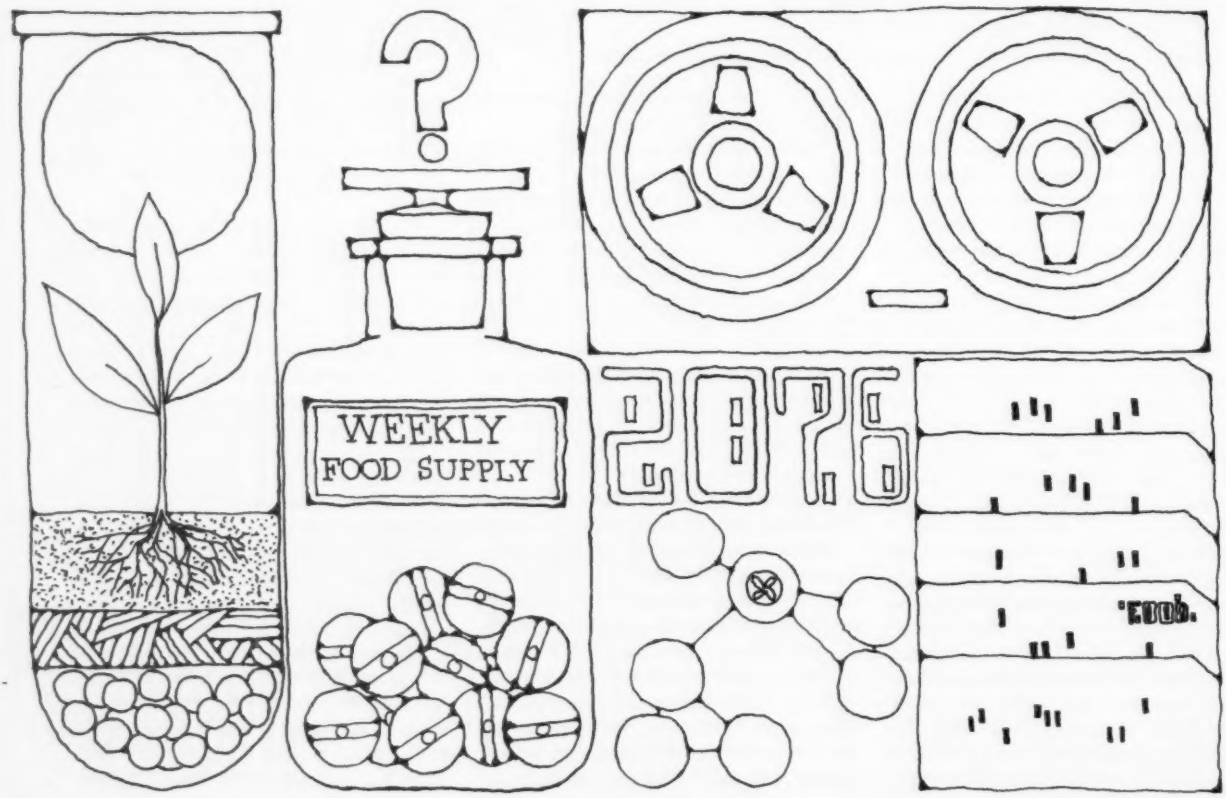
Improved understanding of relationships, so that the computers will give us more sense and less nonsense.

Most important of all, advances in family planning and in greater public acceptance of the replacement-sized family so that mankind might move out from under the Malthusian shadow.

Poetry of agriculture. How many of these things might in fact occur, we cannot now know. But of one thing we can be sure—whatever may be the technical developments in agriculture, its poetry will continue. The wonders of life, growth, and death, the cycle of the seasons, the marvels of continuous creation so clearly manifested in agriculture—these will still be with us. In fact, it might be said that these are the most enduring things about agriculture, and that the subject matter of the poet permits him to be the best prognosticator of all.

What about the institutional arrangements within which crops and livestock will be produced?

Loss of uniqueness. For one thing, agriculture will lose its uniqueness. The farm-nonfarm delineation, which



was basic to an understanding of economic, social, and political events, will become blurred. Delineating between farm and nonfarm will have little more relevance than, say, dividing the present economy into businessmen and nonbusinessmen.

In fact, it will be difficult to tell what is a farm and what is not. Farm production will be merged in an integrated fashion with the acquisition of input items and with the processing, transporting, financing, merchandising, and consumption of the product.

Vanishing family farms. A mixed farming system will emerge. There will be large-scale integrated units, the forerunners of which we already see in the West and South. The family farmer, already under considerable strain, will slowly and reluctantly give up his historic role of supplying all the factors of production: land, capital, and management.

The production of crops and livestock will require farms so large—so much land, so much capital, and so much managerial skill—that a single person will be unlikely to supply them all.

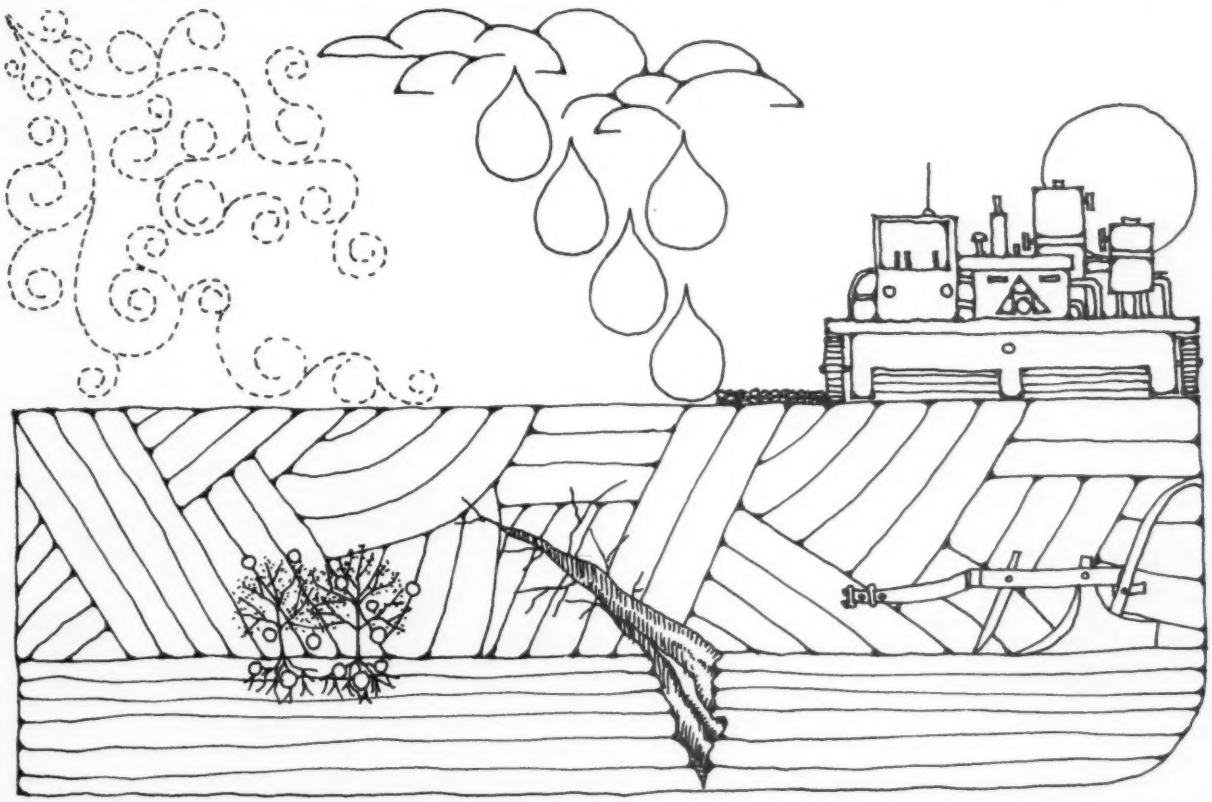
In commercial agriculture, the nearest thing to the family farmer will be a farm operator who lives on the land with his family, rents his farm, borrows his money, and hires his labor. He will make his own decisions on how he combines these inputs, contracting for both his input items and his output of product.

Part-time farms. Besides the farms that produce most of the crops and livestock there will be part-time farms, combining the production of food and off-farm jobs with rural living.

For the first 200 years as a Nation we flocked to the city. For the next 200 years we probably will look toward the country as a place to live. Its warmer personal relationships, cleaner air and water, greater privacy, and greater social stability will look better and better as the years pass. We will be able, in rural areas, to provide most of the social services and utilities that used to be found only in the cities.

Rural development. Practically every nation now has some kind of rural development program to make the rural areas a better place to live and work. It fits the present and future mood. Two hundred years from now the "City Limits" signs will have lost their significance. They will mark a boundary between units of government; they will have limited social and economic distinctions.

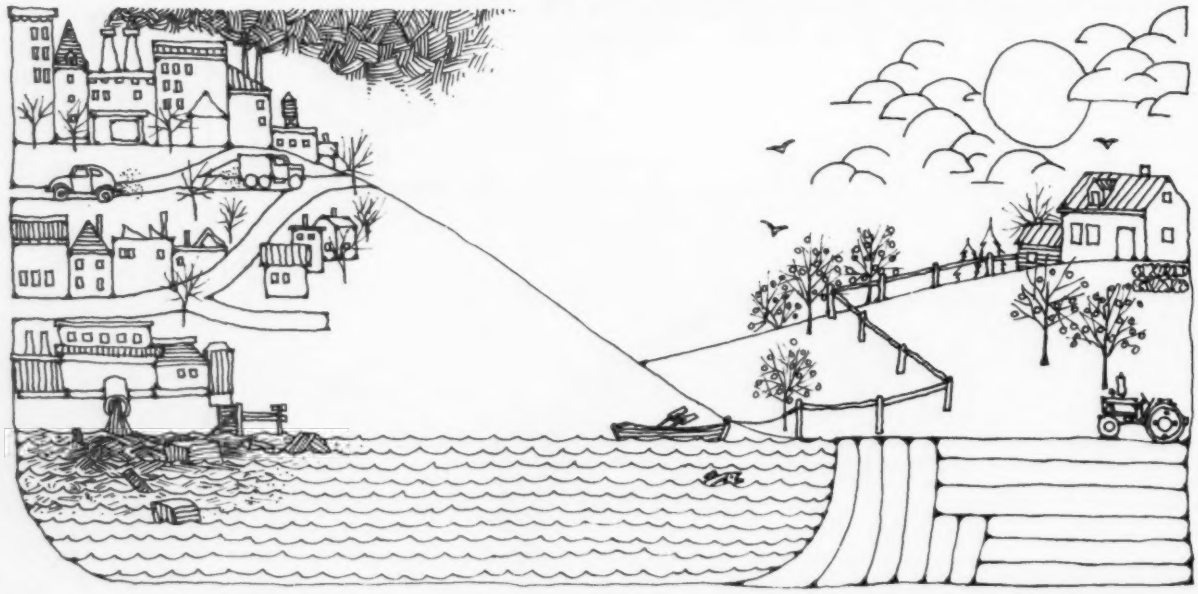
The first 200 years we spent cutting down trees; the next 200 years we will spend planting them. We will put back into trees lands that were deforested in order to be farmed, lands with slopes too steep for modern farm equipment, or too poor to compete with the more productive lands that will be kept in annual crops. Our forests were once considered simply as an obstacle to the plow and as a source of lumber. In the future they will be considered also for their aesthetic and ecological value.



Protect public interest. During most of the 200 years past we sought to get the public domain into private ownership, and to a large measure succeeded. Henceforth we shall be trying to identify and protect the public interest in these privately owned lands.

Is the competitive market to continue as the major, if not sole, determinant of how these lands are to be used? Whether they will be used for cropping, grazing, timber, mining, recreation, industry, residential uses, highways, airports, wildlife, watershed protection, or flood prevention? What is the legitimate public interest in the answers to these questions and how is this interest to be expressed? We are in a transitional phase with regard to land policy. This will be a major issue during the years ahead.

Checking inflation. An important institutional change which may come about during the next 200 years is the capacity to manage our system of money and credit so as to check or at least reduce the rate of inflation now rampant and worldwide. To accomplish this we may have to devote time, thought, and effort on a scale similar to that expended 40 years ago in coping with the Great Depression.



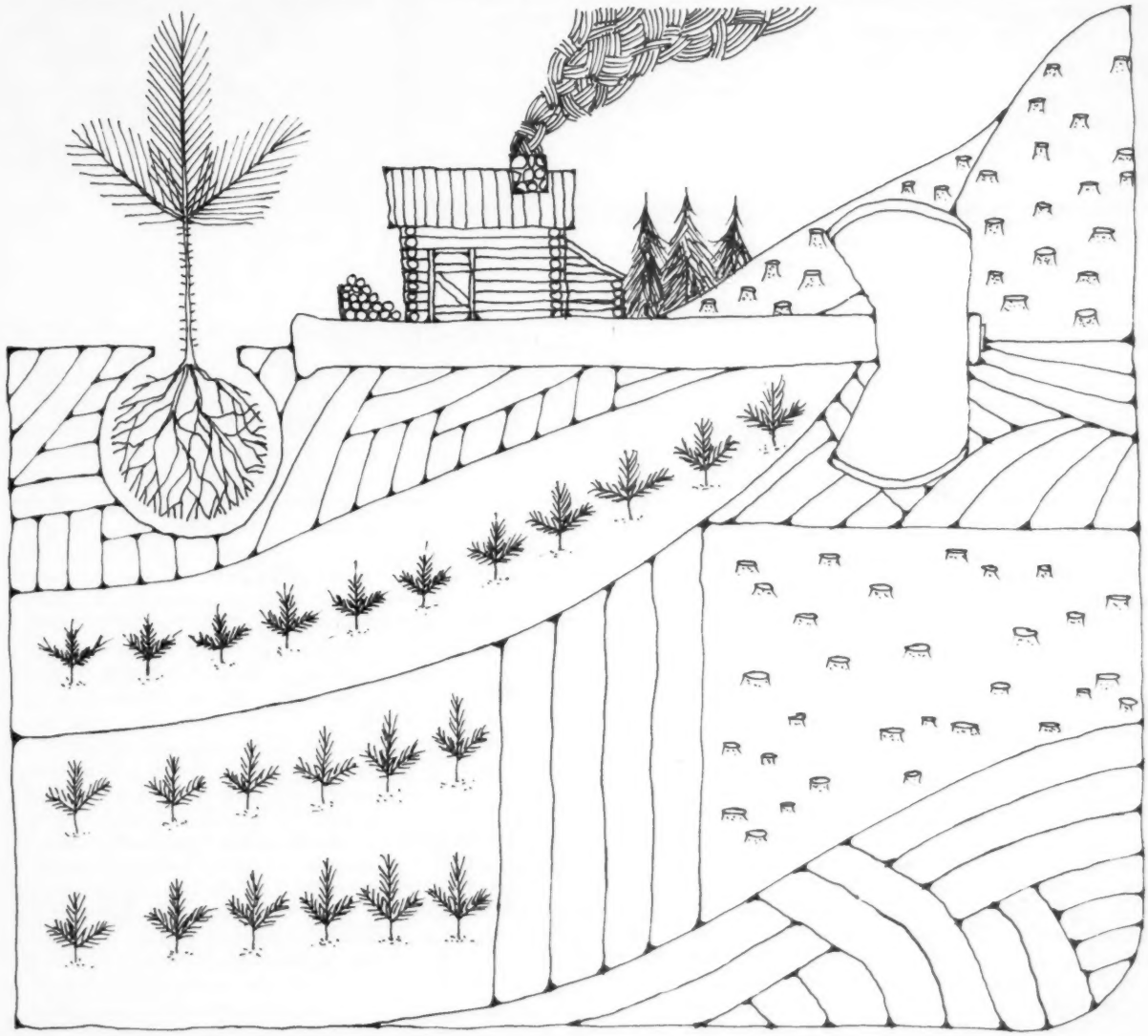
Two hundred years from now, and probably much sooner, no one will be able to buy a pound of butter or a quart of milk or a bushel of wheat anywhere in the U.S. We will be on the metric system—these products will be sold by the kilogram.

Fate of common man. What will be the status of the individual? Ours has been called the Century of the Common Man. The basic rights of full citizenship have been extended to minority groups that had not enjoyed them. Class distinctions have been blurred. These gains are substantial and must be counted greatly to the credit of the generations past. A floor has been placed over the pit of disaster, so that material want is not the problem it once was. During the next 200 years these gains will be extended and consolidated.

Enhance individual roles. These gains have been achieved at a cost, by enormously increasing the role of government and by eroding, to a considerable degree, the feeling of self-reliance that once characterized our people. It will be very important, and very difficult, during the next 200 years to assure that the new-found status accorded to so many of our citizens is used to enhance the role of the individual, rather than to deprive him of his self-reliance. And it will be very important to see that the vast accretions of governmental power are not exploited by selfish, unwise, ambitious men.

This country achieved its independence by curbing the excesses of a powerful government; it would be a tragedy if we were to drift back into abuses from which we escaped 200 years ago, the escape we are here celebrating.

Market orientation. For the commodity programs in agriculture, the recent trend has been away from strong government decisionmaking and in the direction of market orienta-



tion. It may be that the high tide of government involvement in the production and pricing of farm products was reached some 10 years or so ago, and that the years ahead will see commodity policies more nearly in keeping with the long tradition of our country.

What of the recent rash of causes that have arisen in agriculture—consumerism, the drive for ecological betterment, and the opposition to food additives? No doubt these drives will continue and some good things will be accomplished. New factual information, gradually coming available, should check the excesses of these movements, while holding their legitimate gains.

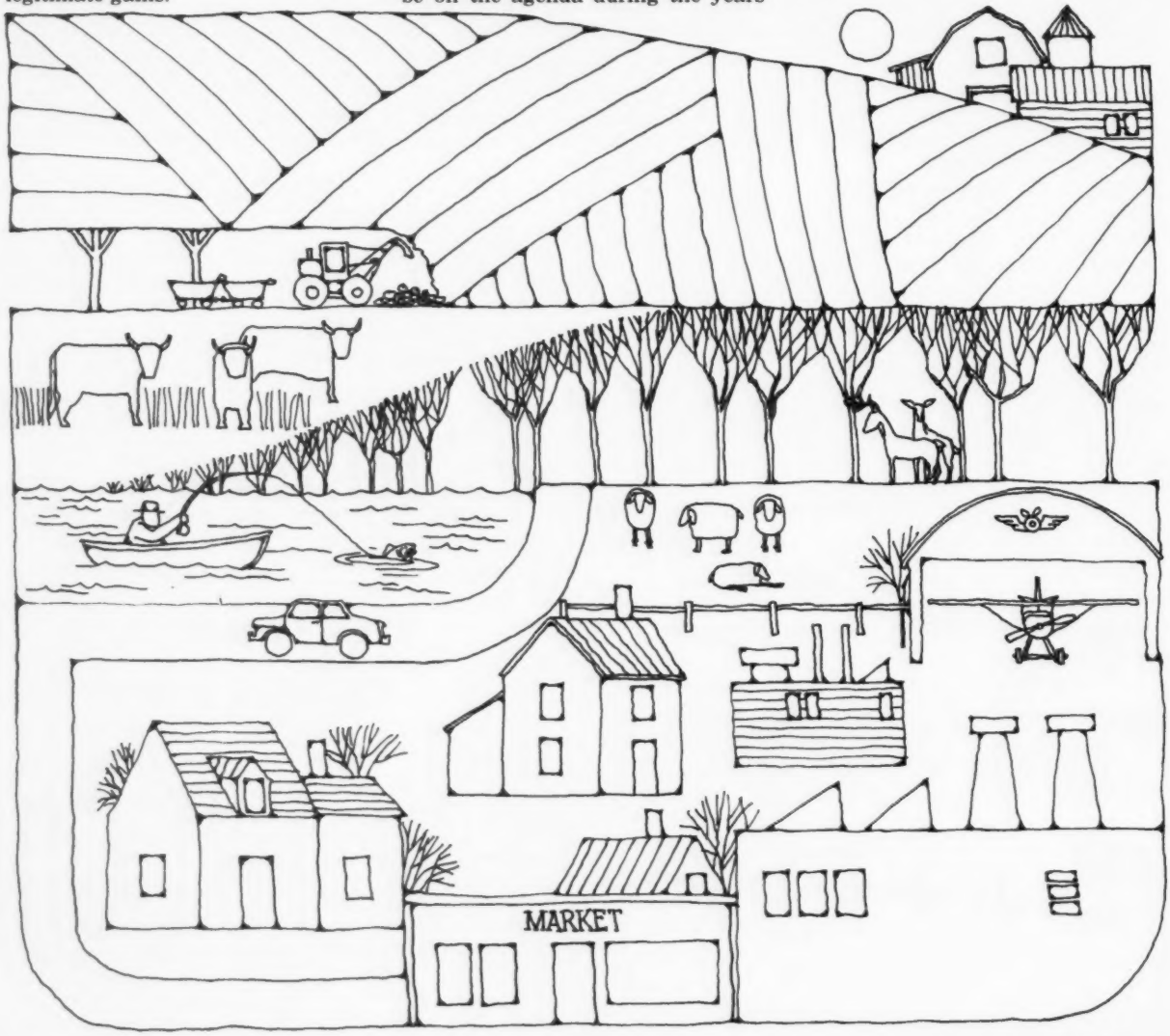
A rose-colored outlook. On balance, this is an optimistic outlook. But even if in general it should in fact be borne out, we could certainly still have problems. It is the nature of the human species to have problems.

Even if all the difficulties that currently are recognized as problems were suddenly solved, a new list would develop within a matter of months.

Time of grief, time of joy. So there will be times of exhilaration during the next 200 years—great feasts and celebrations. And, as the Bible tells us—we will hear of wars and rumors of wars, and there will be earthquakes in diverse places. Thus, problems will be on the agenda during the years ahead, even though by historic comparison or by objective measurement it might appear that the problems would be of modest proportions.

As a final assessment, we turn to the Book of Genesis for this long-term agricultural outlook statement: "While the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter shall not cease." That forecast has been good for about 3,000 years. It seems not overly presumptuous to extend it for 200 more.

[Special material from Don Paarlberg, Director of Economics, USDA.]



The Decade Ahead

How the U.S. farmer fares in the next decade will depend partly on decisions yet to be made abroad.

Always a main factor in the farmer's economic well-being, exports took on added stature in the early 1970's. World shortfalls in grain production, the currency revaluations, efforts to increase livestock production in many foreign countries, and other economic decisions resulted in unprecedented demands for U.S. grain and wide price swings in domestic farm markets.

Much of this increased demand came from the Soviet Union and the People's Republic of China. A key question now is: Will these nations move toward freer trade and more regular participation in world grain markets? Or, will they continue to make occasional heavy purchases?

Foreign policy decisions about levels of livestock production and grain stocks also will help determine future demand in this country.

While the strength of demand is the major uncertainty, the domestic market will remain the major outlet for the products of U.S. farms, and is likely to continue to grow at fairly stable and predictable rates.

The following projections provide a setting for assessing the impact on agriculture of developments in domestic and foreign markets during the next decade. Three alternative situations are covered: baseline, high demand, and low demand.

Baseline

U.S. population rises to 236 million by 1985 from 205 million in 1970. Disposable personal income per person increases 3 percent annually.

Export demand continues to grow, though limited somewhat by high prices and efforts of major importing countries to attain self-sufficiency.

World capacity for cereal production increases faster than consumption, with the European Community, Eastern Europe, and the USSR approaching self-sufficiency.

Policies to maintain high prices in European commodity markets encourage substitution of protein supplements and other feeds for grain.

Japan remains the largest single export market for U.S. wheat and coarse grains but the People's Republic of China imports wheat and exports rice.

High Demand

Population rises to 244 million in 1985.

Per capita disposable income increases an average of 3.3 percent annually.

Exports are high because: (1) The USSR and Eastern Europe attempt to increase livestock production at a faster rate, resulting in more grain imports and higher overall trade with the West; (2) The People's Republic of China becomes more trade oriented,

importing more grain to improve diets; (3) The European Economic Community drops its self-sufficiency policy, setting lower target prices for production, thus permitting continued imports of grain; and (4) Livestock economies of the developing world, particularly poultry, grow faster.

Low Demand

Population rises to 231 million.

Per capita disposable income grows 1.2 percent annually. Export demand is the same as in the baseline situation.

The three situations produce markedly different results for the U.S. farmer. Under the baseline alternative, exports would hold at about current high levels and 40 percent above the recent past (1970-72).

The increase in population and per capita income assumed for this situation would sharply boost domestic demand for several food products over 1970-72 levels.

Major increases: beef and veal, 35 percent; chicken, 37 percent; eggs, 10 percent; corn, 25 percent; sugar, 14 percent; citrus fruit, 26 percent; vegetables and melons, 19 percent, and Irish potatoes, 21 percent.

But demand for some products would drop, reflecting changing tastes and preferences. These include declines of 65 percent for lamb and mutton, 4 percent for cotton lint, and 5 percent for sweet potatoes.

Things would work out much better for the farmer under the high demand projection. Exports would be up sharply over the baseline—wheat, 52 percent; corn, 91 percent; grain sorghum, 69 percent; oats, 90 percent; barley, 25 percent, and soybeans, 18 percent.

Domestic consumption of many commodities also would show sizeable increases over the baseline—beef and veal, 8 percent; pork, 4 percent; chicken, 5 percent; citrus fruits, 4 percent; corn, 18 percent; grain sorghum, 15 percent, and soybeans, 13 percent.

The low demand situation, with its slower rates of growth for population and income, would severely depress demand for major farm commodities. Domestic requirements would fall 8 percent below the baseline for beef and veal, 4 percent for pork, 8 percent for chickens, 2 percent for soybeans, 6 percent for grain sorghum, and 2 percent for wheat.

Exports under the low demand alternative are assumed at the baseline levels.

Total farm output would rise a fifth over 1970-72 in the baseline situation. With yields increasing, crops would be produced on only 316 million acres, 14 million less than in 1975. Rye, corn, silage, oats, cotton, sugarcane, tobacco, sweet potatoes, dry peas—all would require fewer acres.

With high demand, crop acreage would rise to 362 million and output would total 9 percent higher than under baseline conditions. But with low demand, acreage would drop 10 million below baseline levels with production down 4 percent.

Production changes for individual products under the three alternatives are shown in the accompanying table.

[Based on a speech by Leroy Quance, National Economic Analysis Division.]

CHANGES IN PRODUCTION BY 1985: THREE ALTERNATIVES

Commodity	Unit	Production 1970-72 av. (mil. units)	Baseline as pct. of 1970-72	High Demand as pct. of baseline	Low Demand as pct. of baseline
Beef & veal[1]	lbs.	22,531	133	108	92
Pork[1]	lbs.	13,951	113	104	96
Lamb & mutton[1]	lbs.	550	35	107	131
Chicken[2]	lbs.	8,831	136	105	92
Turkey[2]	lbs.	1,837	144	105	88
Eggs	doz.	5,783	110	101	100
Milk[3]	cwt.	1,186	102	102	105
Wheat[4]	bu.	1,505	117	125	98
Rice[5]	cwt.	85	139	106	98
Soybeans	bu.	1,193	173	113	98
Corn[6]	bu.	5,089	130	118	96
Grain sorghum	bu.	795	142	115	94
Oats	bu.	831	106	106	96
Barley	bu.	434	127	106	97
Rye	bu.	38.6	104	103	108
Peanuts[7]	lbs.	3,091	156	104	90
Cotton lint	bales	11.5	96	101	104
Sugar[8]	tons	5.9	131	105	96
Tobacco[9]	lbs.	1,788	120	99	100
Citrus fruit[10]	lbs.	22,749	125	104	96
Noncitrus fruit[10]	lbs.	19,571	104	104	99
Vegetables & melons[10]	lbs.	44,921	126	104	97
Irish potatoes[10]	cwt.	313	114	104	97
Sweet potatoes	cwt.	12.5	95	101	93
Dry beans & peas[11]	lbs.	2,112	106	101	95
Flaxseed	bu.	20.6	136	100	100
Hay	tons	128	109	106	96
Silage[12]	tons	129	113	105	98
Pasture	tons	150	110	107	95
Crop production index	1967=100	108	125	113	97
Livestock production index	1967=100	107	116	105	96
Farm output index	1967=100	108	120	109	96

[1]Carcass weight. [2]Ready-to-cook weight. [3]Milk equivalent. [4]Grain equivalent. [5]Rough basis. [6]Grain only. [7]Farmers' stock basis. [8]Raw value. [9]Farmers' sales basis. [10]Fresh equivalent. [11]Cleaned basis. [12]Includes straw, silage, and beet pulp.

Recent Publications

Livestock Trucking Services: Quality, Adequacy, and Shipment Patterns. L.A. Hoffman, P.P. Boles, and T.Q. Hutchinson, National Economic Analysis Division. AER-312.

Based on a 1972 survey of livestock handlers and feedlot operators, this study examines the for-hire truck service experienced by shippers of beef cattle and calves. Factors considered include: major flow patterns of beef cattle, availability of for-hire truck service, extent of and reasons for shippers entering private carriage, channels through which shippers contact truckers, condition of animals after truck transport (including weight and death loss), and shippers' satisfaction with for-hire truck service.

Cotton Gin Operating Costs in West Texas, the Lower Rio Grande Valley, and the Blacklands of Texas, 1973 Season. Dale L. Shaw, Charles A. Wilmot, and Betty K. Heron, Commodity Economics Division. AER-318.

Compared with the 1972 season, average ginning volumes and rates of capacity utilization in the 1973 season were substantially higher for cotton gins in West Texas, appreciably lower in the Lower Rio Grande Valley, and essentially unchanged in the Blacklands. Cost data were collected from a sample of 40 gins in West Texas, 20 in the Lower Rio Grande Valley, and 27 in the Blacklands.

Foreign Firms with Investments in the U.S. Food and Fiber System. Kenneth R. Krause. AER-302.

This report contains names of foreign parent companies believed to be involved in the U.S. food and fiber system, names and addresses of their U.S. subsidiaries, and an indication of the products they handle. Since foreign direct investment in the U.S. farming and the food and fiber system is of very recent interest, the list of firms is not exhaustive but provides a basic point of departure for study of the topic.

Economics of Rural Ambulance Service in the Great Plains. Gerald A. Doeksen and Bernal Green, Economic Development Division, and Jack Frye, Oklahoma State University. AER-308.

Based on eight counties in northwest Oklahoma, this study analyzes the decline in rural ambulance service. Funeral home operators—major providers of ambulances in rural areas—have often been forced to discontinue the service due to rising labor and equipment costs. A procedure for deciding on the feasibility of establishing an Emergency Medical Service system in areas lacking ambulance service is detailed.

Single copies of the publications listed here are available free from The Farm Index, Economic Research Service, Rm. 1664–So., U.S. Department of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university. For addresses, see July and December issues of The Farm Index.

Farmers' Expenditures for Custom Pesticide Services, 1971. Walter L. Ferguson, National Economic Analysis Division. AER-314.

Custom pesticide services cost farmers $428 million in 1971. According to this report, $154 million went for the costs of applying the pesticides; the rest for the pesticides themselves. About 98 percent of the expenditures were for crops, and the remainder for livestock and other farm uses. The Pacific and Corn Belt regions accounted for over a third of the total spent on crops.

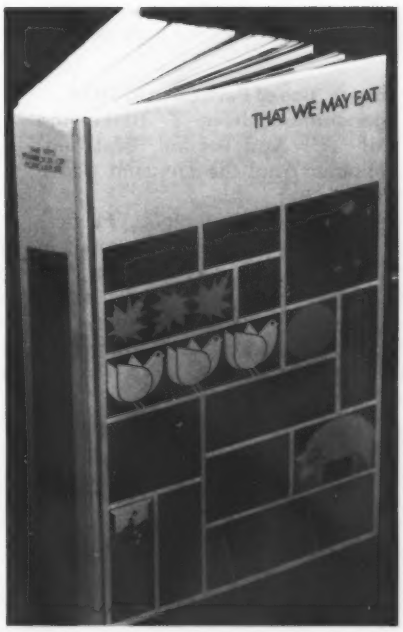
Alternative Futures for Nonmetropolitan Population, Income, Employment, and Capital. Clark Edwards and Rudolph DePass, Economic Development Division. AER-311.

That We May Eat

That We May Eat, the 1975 Yearbook of Agriculture, tells the story of our Nation's State agricultural experiment stations. And it is appropriately issued on the 100th anniversary of the founding of the first stations in 1875.

The 400-page book is chocked full of photos—some in full color—illustrating the many milestones in agricultural research, ranging from the discovery of vitamins and the creation of hybrids to the shackling of destructive plant and animal diseases.

Congress receives over 233,000 copies of the Yearbook, with some available for free distribution. So check with your Congressman or Senator for a copy. If none are left, however, you can get the Yearbook for $7.30 from government bookstores across the country. Or send a check or money order to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. The Agriculture Department has no copies for public distribution or sale.



In this study, a simulation of population, income, employment, and capital in the nonmetro and metro sectors suggests that 1960-70 trends point to equal per capita incomes between the two sectors by the year 2000, and a slowing in the nonmetro outmigration. The study also gives seven alternative models which the Federal Government could choose from to help raise nonmetro income levels by 1990. Side effects of these alternatives are also discussed.

Views on the 1975/76 Sunflowerseed Situation in the Soviet Union. George W. Kromer, Commodity Economics Division. ERS-617.

Sunflowerseed production in the U.S.S.R. will probably be down a fourth from last year's crop of 7.4 million tons. Drought, moth damage, and cutting of some acreage for silage are mainly to blame, says this report.

Structural Changes in West European Agriculture, 1950-70. Cynthia A. Breitenlohner, Foreign Demand and Competition Division. FAER-114.

Fundamental changes occurred in West European agriculture during 1950-70, namely in agriculture's role in the overall economy, the farm labor force, agricultural productivity, land use, and agricultural inputs. The study analyzes these changes and also gives an outlook for the rest of the 1970's.

Farmers' Use of Pesticides in 1971 ... Expenditures. Helen T. Blake and Paul A. Andrilenas, National Economic Analysis Division. AER-296.

According to this report, farmers spent over $1 billion on pesticides in 1971, 80 percent more than in 1966. Expenditures are also broken down by type of pesticide and use. The findings are based on a 1972 survey of 8,600 U.S. farmers.

The Hired Farm Working Force of 1974. Gene A. Rowe and Leslie Whitener, Economic Development Division. AER—297.

According to this report, the annual employment of farmworkers appears to have stabilized after a long-term downtrend. Showing little change over the last 3 years, the 1974 farm labor force was 2.7 million strong (of persons 14 years old and up). Generally, the hired farm wageworkers were young, white, male, and resided in nonfarm areas. Approximately 1.6 million of the workers were employed solely in farm work during the year; the rest did both farm and nonfarm work.

The American Vegetable Industry in the 1970's. Charles W. Porter, Commodity Economics Division. TVS—197.

As this publication points out, per capita use of vegetables continues to gain during the 1970's, while the shift from fresh to processed vegetables has about run its course. In the processing and wholesaling sector of the market, the trend to fewer but larger firms continues. Supply sources are also shifting as the degree of specialization intensifies.

The Feed-Livestock Economy of East Germany: Prospects to 1980. Thomas A. Vankai, Foreign Demand and Competition Division. FAER—110.

Based on rising per capita income and stable retail food prices in East Germany, this report concludes that the country's meat consumption could increase about 2.3 percent annually to 1980. It predicts that domestic meat production will keep up with the demand, assuring self-sufficiency. Since production of livestock feed is projected to fall short, feed imports will increase.

Economic and Population Growth in Smaller Central Place Areas of Pennsylvania. R. Gar Forsht, Natural Resource Economics Division, and J. Dean Jansma, Pennsylvania State University. AER—310.

Study results show that many of the smaller rural areas in Pennsylvania are viable economic entities, generally with balanced economic growth. The higher economic growth rates have occurred in areas that have a high percentage of workers employed in manufacturing. Also, these areas have had more population growth.

Balance Sheet of the Farming Sector, 1975. Carson D. Evans, Philip T. Allen, Richard W. Simunek, and James B. Hottel. AIB Bul. 389.

The 31st issue of this annual series shows the major farm asset inventory and liability accounts for the beginning of 1975. Total debt and asset figures for January 1 were record highs, but the rates of increase were not. The increase in debt slowed somewhat, and the gains in assets and equity were half what they were during 1973.

Shippers' Cost of Merchandising U.S. Cotton, 1972/73 Season. Whitman M. Chandler, Commodity Economics Division. AER—317.

Shippers' cost of assembling and distributing U.S. cotton are given for the 1972/73 season. Costs per bale averaged almost $27, with transportation accounting for nearly half. Other costs detailed are: buying and local delivery, storage, compression, other warehouse services, insurance, financing, selling costs, and overhead expense.

Cotton Gin Operating Costs in the San Joaquin Valley of California, 1973/74. Charles A. Wilmot, Dale L. Shaw, and Betty K. Heron, Commodity Economics Division. AER—316.

A survey of 39 sample gins in California's San Joaquin Valley in 1973/74 revealed no change from the previous season in average rated ginning capacities. However, averages dropped for annual volumes ginned and plant capacity utilized. Ginning revenues were up almost $8 per bale.

Cotton Gin Operating Costs in the Midsouth, 1972/73 and 1973/74. Joseph L. Ghetti, Commodity Economics Division. AER—301.

Cotton gin operating costs in the Midsouth are analyzed for 1972/73 and 1973/74, based on a sample of about 7 percent of the ginning capacity of the region. Capacity utilization of the sample gins dropped 6 percent during the study period, to a low of 58 percent. Average cost per bale went up 16 percent, to $22.45.

Economic Trends

Item	Unit or Base Period	1967	1974 Year	1974 Oct.	1974 Nov.	1975 Sept.	1975 Oct.	1975 Nov.
Prices:								
Prices received by farmers	1967=100	—	184	186	182	194	193	185
Crops	1967=100	—	214	230	225	202	199	188
Livestock and products	1967=100	—	164	156	153	188	190	184
Prices paid, interest, taxes and wage rates	1967=100	—	169	176	178	189	188	188
Family living items	1967=100	—	161	167	171	180	180	182
Production items	1967=100	—	172	183	183	194	192	192
Ratio[1]	1967=100	—	109	106	102	103	103	98
Wholesale prices, all commodities	1967=100	—	160.1	170.2	171.9	177.7	178.9	178.2
Industrial commodities	1967=100	—	153.8	164.8	165.8	173.1	174.7	175.4
Farm products	1967=100	—	187.7	187.5	187.8	197.1	193.7	191.7
Processed foods and feeds	1967=100	—	170.9	183.5	189.7	186.1	186.2	182.6
Consumer price index, all items	1967=100	—	147.7	153.0	154.3	163.6	164.6	—
Food	1967=100	—	161.7	166.1	167	177.8	179.0	—
Farm Food Market Basket:[2]								
Retail cost	1967=100	—	161.9	164.6	166.4	176.4	177.2	—
Farm value	1967=100	—	177.6	182.7	183.3	202.8	197.2	—
Farm-retail spread	1967=100	—	152.0	153.1	155.7	159.7	164.5	—
Farmers' share of retail cost	Percent	—	43	43	43	45	43	—
Farm Income:[3]								
Volume of farm marketings	1967=100	—	111	159	137	128	173	158
Cash receipts from farm marketings	Mil. dollars	42,817	93,521	17,767	10,044	8,771	11,563	10,500
Crops	Mil. dollars	18,434	52,097	8,048	6,838	4,613	6,894	6,500
Livestock and products	Mil. dollars	24,383	41,424	3,719	3,206	4,158	4,669	4,000
Realized gross income[4]	Bil. dollars	49.9	101.1	—	—	106.2	—	—
Farm production expenses[4]	Bil. dollars	38.3	73.4	—	—	78.0	—	—
Realized net income[4]	Bil. dollars	11.6	27.7	—	—	28.2	—	—
Agricultural Trade:								
Agricultural exports	Mil. dollars	—	21,994	1,712	2,082	1,610	2,082	—
Agricultural imports	Mil. dollars	—	10,247	741	837	945	829	—
Land Values:								
Average value per acre	Dollars	[6]168	[7]339	—	—	—	—	354
Total value of farm real estate	Bil. dollars	[6]181.9	[7]335	—	—	—	—	370
Gross National Product:[4]	Bil. dollars	793.9	1,397.4	—	—	1,503.6	—	—
Consumption	Bil. dollars	492.1	876.7	—	—	968.8	—	—
Investment	Bil. dollars	116.6	209.4	—	—	179.1	—	—
Government expenditures	Bil. dollars	180.1	309.2	—	—	3,435	—	—
Net exports	Bil. dollars	5.2	2.1	—	—	12.2	—	—
Income and Spending:[5]								
Personal income, annual rate	Bil. dollars	629.3	1,150.5	1,185.0	1,184.5	1,270.9	1,283.6	—
Total retail sales, monthly rate	Mil. dollars	26,151	44,815	45,858	44,529	49,473	50,191	50,705
Retail sales of food group, monthly rate	Mil. dollars	5,759	9,980	10,431	10,455	—	11,282	11,322
Employment and Wages:[5]								
Total civilian employment	Millions	74.4	[9]85.9	[9]86.3	[9]85.7	[9]85.4	[9]85.4	[9]85.3
Agricultural	Millions	3.8	[9]3.5	[9]3.4	[9]3.4	[9]3.5	[9]3.4	[9]3.3
Rate of unemployment	Percent	3.8	5.6	6.0	6.6	8.3	8.6	8.3
Workweek in manufacturing	Hours	40.6	40.0	40.0	39.5	39.8	39.8	39.8
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	4.41	4.57	4.59	4.89	4.91	4.93
Industrial Production:[5]	1967=100	—	125	125	122	116	116	—
Manufacturers' Shipments and Inventories:[5]								
Total shipments, monthly rate	Mil. dollars	46,449	81,723	87,402	85,675	86,288	87,621	—
Total inventories, book value end of month	Mil. dollars	84,655	150,404	145,062	147,135	146,413	146,317	—
Total new orders, monthly rate	Mil. dollars	46,763	83,297	85,678	83,805	85,453	86,278	—

[1]Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2]Average annual quantities of farm food products purchased by urban wage earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. [3]Annual and quarterly data are on 50-State basis. [4]Annual rates seasonally adjusted third quarter. [5]Seasonally adjusted. [6]As of March 1, 1967. [7]As of November 1, 1974. [8]As of March 1, 1975. [9]Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

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